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ABSTRACT

The differences in academic performance among two levels of provisionally accepted (Learning Support) college students--System-placed (S) and Institutionally-placed (I)--and other students were investigated. Of 523 Learning Support students in a required reading course (RDG 099A), 402 students exited the course. Chi-square analyses and t-tests revealed that a statistically significantly greater number of I students successfully completed RDG 099A, scored higher on the College Placement Examination in Reading (CPERDG-POST) exit examination, and earned higher grades in 12 subsequent reading-intensive core curriculum courses. Among the S students, those who exited RDG 099A had higher Scholastic Aptitude verbal test scores and CPERDG pretest scores than did S students who did not exit. Most Learning Support students, regardless of placement criteria, demonstrated improvement in metacognitive awareness for college study tasks as measured by gains on the Learning and Study Strategies Inventory after completion of the required reading course. Other results show that all Learning Support students made statistically significantly lower grades during the quarter following the reading course than other students in the same 12 reading-intensive core curriculum courses. The findings are congruent with research that has shown the importance of prior performance and achievement variables for college academics. They support the position that system placement requirements (for 5 students) may be set too low if S students are to succeed at the university. (Contains 9 tables and 10 references.) (Author/SLD)

Running Head: AT-RISK COLLEGE STUDENTS

Academic Performance Comparisons among At-Risk and Other College Students

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Abstract

The differences in academic performance among two levels of provisionally accepted (Learning Support) college students -- System-placed(S)and Institutionally-placed (I) -- and other students were investigated. Chi-square analyses and t-tests revealed that between the two levels of Learning Support students, statistically significantly more I students successfully completed a required reading course (RDG 099A), scored higher on the College Placement Examination in Reading exit exam (CPERDG-POST), and earned higher grades in 12 subsequent reading-intensive core curriculum courses. Among the S students, those who exited RDG 099A had higher SATV scores and CPERDG-PRE scores than the S students who did not exit. Most Learning Support students, regardless of placement criteria, demonstrated improvement in metacognitive awareness for college study tasks as measured by gains on the Learning and Study Strategies Inventory (LASSI)after completion of the required reading course. Other results showed that all Learning Support students made statistically significantly lower grades during the quarter following the reading course than other students in the same 12 reading-intensive core curriculum courses. The findings are congruent with research that has shown the importance of prior performance and achievement variables for academic

college and supports the position that System placement requirements (for S students) may be set too low if S students are to succeed at the university.

Academic Performance Comparisons among At-Risk and Other College Students

Students who are underprepared for the literacy demands of college courses often fail. Consequently, reading/study courses for under-prepared, provisionally-accepted college students are prolific in institutions of higher education across the nation. In Georgia, University System requirements which have included minimum Scholastic Aptitude Test scores and high school grade point averages have been used to place students in Developmental Studies/Learning Support classes. In addition, system institutions have often used the College Placement Examination in Reading (CPERDG-PRE) to place students appropriately at their institutions. New University System admissions standards in the state will be based upon the "Freshman Index" (University System Board of Regents, 1996, May, p. 1), an admissions formula that combines and weights students' SAT scores and high school grades.

Although the quality of learning and effort in the first term in college have been shown in some studies to be critical predictors of students' success in college (Houston, 1987; Hess, Grafton, & Michael, 1983; Healy, 1991), empirical research is woefully lacking in "first-term" performance of under-prepared college students. Specifically, the salient characteristics of students who are under-prepared for college reading/study tasks

are largely unknown, and instruction is often provided without knowledge of course effectiveness (Kulik, Kulik, & Schwalb, 1983; Abraham, 1992; Thompson, 1993). Ultimately, the effectiveness of Learning Support programs and courses depends upon the success of its students. If students can achieve learning goals in a college environment, Learning Support programs can advocate for continued support. Comparisons of Learning Support students and regularly-admitted students in academic credit courses are important to those who must make decisions as to where to focus resources for academic assistance of the under-prepared.

The purpose of the present study was to answer questions concerning the academic performance of under-prepared college reading students. Of primary concern was the identification of student characteristics that appear to be most important to under-prepared students' academic performance in reading-intensive college courses. The researchers compared the performance of System-placed (S) students with lower entrance credentials and Institution-placed (I) students with somewhat higher entrance credentials. The academic performance of these Learning Support reading students was also compared with other students' performance in selected reading-intensive core curriculum courses.

Method

Participants

Eight hundred thirty students were randomly assigned to 38 sections of RDG 099A (a non-credit Learning Support course designed to prepare students for college reading/study tasks) when students registered for Fall Quarter, 1994, classes at a southeastern regional university. Eighteen (out of 19) of the RDG 099A instructors who were assigned to teach the Learning Support students returned consent forms indicating willingness to participate in the study and to recruit students for the study. Four hundred two of 523 participating students exited the Learning Support reading course at the end of Fall Quarter, 1994. Demographics of the exiting student sample are shown in Table 1.

Procedures and Materials

Cognitive aptitude data collected for participating students included Scholastic Aptitude Test verbal scores (SATV), high school grade point averages (HSGPA), and entering College Placement Examination in Reading scores (CPERDG-PRE). Performance variables included students' exit status in RDG 099A and grades earned in any of 12 reading-intensive core curriculum courses during the quarter following successful completion of RDG 099A. Participating students' college transcripts were retrieved from the registrar at the end of Winter Quarter, 1995. Grade point averages (GPARC) in students' reading-intensive core

curriculum courses were calculated and compared among system-placed students (S) and institutionally-placed students (I) and between Learning Support (both S and I students) and other students.

Metacognitive and affective data were obtained for the Learning Support students using the Learning and Study Strategies Inventory (LASSI)(Weinstein, Palmer, & Schulte, 1989). The LASSI is a self-report inventory comprised of 10 scales that are designed to gather information about an entering college student's learning and study practices and attitudes. Rather than a composite score, the LASSI offers 10 scale scores that were normed with regularly-admitted college freshmen in the United States.

An exploratory factor analysis of the LASSI used with at-risk students at a large southern university provided the theoretical constructs for the present study (Olejnik & Nist, 1992). In the present study, the Olejnik and Nist latent variable scales were used to measure students' metacognitive awareness of college reading/study requirements and students' affect toward learning in college. That is, nine LASSI scale scores were combined to yield three latent variable scale scores--cognitive activities (META1), goal orientation (META2), and effort-related activities (AFFECT). Table 2 shows the relationship of the present study's metacognitive and affective

constructs as they are labeled in the Olejnik and Nist study (1992), and by the LASSI authors.

Data Analysis

Descriptive statistics and t-tests were used to compare System- and Institution-placed students in terms of cognitive, performance, metacognitive, and affective variables. A Chi square, two sample, goodness-of-fit analysis was used to compare grades and number of withdrawals in reading-intensive core curriculum courses for Learning Support students and other students during Winter, 1995.

Results

The proportions of S and I students who successfully exited RDG 099A and who were placed back into RDG 099A for another quarter are given in Table 3. A two-sample, Chi-square test was used to determine whether the number of S students who exited RDG 099A and the number of I students who exited RDG 099A differed significantly. The obtained $\chi^2 = 46.63$, df = 1, p-value = .0000 indicated that there is a relationship between the type of student and exit from the reading course. That is, statistically significantly more I students exited RDG 099A than S students.

Table 4 provides comparisons of S and I students on cognitive, metacognitive, and affective pre-variables as well as performance on the CPERDG-POST at the end of the reading/study course. T-tests showed statistically significant differences on

the SATV and CPERDG-PRE scores. As expected due to placement criteria, I students had higher SATV and CPERDG-PRE scores than S students. I students also scored significantly higher than S students on the CPERDG-POST; however, the S and I students' CPERDG-POST difference was about half as great as their CPERDG-PRE difference. This may be due to the System policy that required the S students to score at least 75 on the CPERDG for exit. I students had already earned a score of 75 on the test; and therefore, may not have been motivated to achieve a higher score.

Table 5 provides comparisons for the Learning Support exit and non-exit students. Of the pre-course variables, only HSGPA distinguished the exiting and non-exiting I students, while SATV and CPERDG-PRE differed for the exiting over non-exiting S students. Exiting S students also scored significantly higher on the CPE-RDG Post than non-exiting students. There were no significant differences between exiting and non-exiting students on the metacognitive and affective variables.

Gain scores for the CPERDG, metacognitive, and affective variables were compared for S and I students. Comparisons are reported in Table 6. Gain scores for all students who exited RDG 099A showed significant increases in all four areas (CPERDG, Meta1, Meta2, and Affect). Gain scores for I students who did not exit RDG 099A showed two areas of increase (Meta1 and Meta2).

Gain scores for S students who did not exit RDG 099A showed significant increases in two areas (CPERDG and Meta2). It is interesting to note that significant student growth occurred in some areas even for those who did not exit the RDG 099A course.

Students' Subsequent Grade Point Averages

The effectiveness of a prerequisite reading course can be evaluated in terms of the subsequent performance of its students in reading-intensive core curriculum courses. Participating students' transcripts were analyzed for reading-intensive course enrollment, Winter, 1995. Transcripts indicated that the exited students were enrolled in 12 separate reading-intensive core-curriculum courses. In order for a particular course to be included for comparative analyses, courses had to meet the following criteria: a) at least 10 Learning Support students (who exited Fall, 1994) had to be enrolled in the Winter, 1995, course; b) enrolled Learning Support students must have included both S and I students; and c) the course must have been considered by the researcher to be a reading-intensive course. Table 7 provides a comparison of GPAs for S and I students in the 12 reading-intensive courses. Data analysis shows that I students earned statistically significantly higher grades than the S students.

Table 8 reports descriptive statistics for the Learning Support students who enrolled in and earned a grade in at least

one of the 12 courses and other students enrolled in the same courses during Winter, 1995. (Forty of the Learning Support students were enrolled in more than one of the 12 courses.) The overall GPA for the other student group in these 12 courses was 2.25. Learning Support Students' average GPA was 1.74.

A two-sample, Chi-square test was used to determine whether the frequency of grades and withdrawals differed between other students and Learning Support students in the 12 reading-intensive core curriculum courses. The obtained $\chi^2 = 75$, df = 5, p-value = .0000 indicated that there is a relationship between the type of student and the type of grade. That is, other students earned significantly higher grades in the 12 reading-intensive courses (.51 letter grade higher) than Learning Support students. Only two percent of all As, but approximately 10 percent of all Ds and Fs were earned by Learning Support students. Table 9 shows numbers of grades (including failures and withdrawals) and grade point averages earned in the twelve reading-intenive core curriculum courses.

Discussion

Findings indicated that students with higher SATV scores and higher high school grade point averages successfully completed the Learning Support reading course. Although I students' SATV scores were similar, the I students who exited were also those who in high school, had earned higher grades. That is, the high

school grade point averages of exiting I students were significantly higher (.49) than those of I students who did not exit. In contrast, those S students who exited had significantly higher SAT verbal scores (24 points) and CPE Pre-Test scores (2 points) than those who did not exit. High school grade point averages for both exit and non-exit S students were similar.

The Learning Support reading course appeared to have a positive effect on exiting students. All exiting students showed gains in the measured areas. Non-exiting student patterns for the CPERDG and metacognitive awareness areas were irregular. Neither I nor S non-exiting students showed statistically significant gains in affect toward learning in college. Furthermore, the non-exiting S students showed a decrease in affect.

Although I students scored significantly higher than S students on the CPERDG-POST, S students showed greater CPERDG-POST gains than I students. This may be explained by the fact that I students took the CPERDG-POST in order to participate in the study, they were not otherwise rewarded for improving their score and did not need to pass the test for exiting purposes. They had already achieved a System-required score of 75. S students, on the other hand, were required by the System to achieve a score of 75 in order to exit RDG 099A. These students may have been highly motivated to improve their scores. (See

Table 5, CPERDG-PRE.) Exiting S students gained 6.39 points on the CPERDG; non-exiting S students gained 2.59 points -- more than either group of the I students.

As expected, Learning Support students' overall performance was statistically significantly lower than other students in the 12 selected reading-intensive core curriculum courses. However, among the reading-intensive courses, those courses appearing to require the most extensive reading, for example, the history and political science courses, were the most challenging for both the Learning Support and the other students. The study supports the importance of prior performance and achievement variables for academic achievement in college and appears to indicate that System placement requirements (for S students) may be set too low for students' probable success at the university.

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Table 1. Description of RDG 099A-Exit Students

Demographic	n	Percent
Gender		
Female	248	61.7
Male	154	38.3
Age		
19.4 (mean)	402	
1.9 (s)		
Race		
Black	194	48.3
American Indian	1	0.2
Asian-Pacific	2	0.5
Hispanic	4	1.0
White	201	50.0

Table 2. Metacognitive and Affective Constructs Measured by LASSI in Present Study

Cognitive Activities (META1)	Effort-Related Activities (AFFECT)
Information Processing	Motivation
Study Aids	Time Management
Self-Testing	Concentration
Goal Orientation (META2)	
Selecting Main Ideas	
Test Strategies	
Anxiety	

Note. Underlined = Olejnik and Nist constructs; ALL CAPS = Construct names from the present study; Regular type = LASSI constructs.

Table 3. Student Exit by Placement

	I		S		Total	
	n	%	n	%	n	%
Students placed back into RDG 099	35	10.9	72	35.64	107	20.46
Exited Students	286	89.1	130	64.36	416	79.54
TOTAL	321	61.38	202	38.62	523	100

Table 4. Comparisons of S and I students on Pre-Variables and CPERDG-POST

HSGPA	n	mean	sd	t	p-value
I	319	2.56	0.49		
				.3882	.6980
S	202	2.55	0.39		
SATV					
I	315	332.76	40.59		
				11.16	.0001
S	200	295.10	35.05		
CPERDG-PRE					
I	318	76.38	2.34		
				22.55	.0001
S	193	70.77	2.92		
META1-PRE					
I	311	75.70	13.50		
				-1.47	.1417
S	200	77.47	12.86		
META2-PRE					
I	311	65.22	12.82		
				1.13	.2563
S	200	63.90	12.92		
AFFECT-PRE					
I	311	80.70	15.71		
				-.5854	.5585
S	199	81.50	14.03		
CPERDG-POST					
I	315	77.11	4.93		
				6.39	.0001
S	202	74.57	4.06		

Table 5. Comparisons for S and I Students, Exit and Non-Exit

Variable		n	mean	t	p-value
HSGPA					
	(X)	284	2.62		
I				-5.8432	.0000*
	(P)	35	2.13		
	(X)	130	2.58		
S				-1.5453	.1239
	(P)	72	2.49		
SATV					
	(X)	280	331.8		
I				.7853	.4372
	(P)	35	339.7		
	(X)	129	303.6		
S				-4.5583	.0001*
	(P)	71	279.5		
CPERDG-PRE					
	(X)	283	76.3		
I				-0.2528	.8006
	(P)	35	76.2		
	(X)	124	71.29		
S				-3.3501	.0010*
	(P)	69	69.85		
CPERDG-POST					
	(X)	280	77.29		
I				-1.7870	.0749
	(P)	35	75.71		
	(X)	130	76.40		
S				-10.8226	.0000*
	(P)	72	71.26		

Variable		n	mean	t	p-value
META1-PRE					
	(X)	280	76.0		
I				-1.3715	.1712
	(P)	31	72.5		
	(X)	129	76.73		
S				1.0874	.2782
	(P)	71	78.8		
META2-PRE					
	(X)	280	65.4		
I				-0.7815	.4351
	(P)	31	63.51		
	(X)	129	64.6		
S				-1.1661	.2450
	(P)	71	62.4		
AFFECT-PRE					
	(X)	280	81.12		
I				-1.4325	.1530
	(P)	31	76.8		
	(X)	128	80.39		
S				1.505	.1338
	(P)	71	83.50		

Table 6. Gain Score Comparisons Within S and I Students After Completion of RDG 099A.

		Post-RDG 099A(Gain Scores)			
		n	mean	t	p-value
CPERDG					
	(X)	277	0.9169	3.0327	.0027*
I					
	(P)	35	-0.5714	-0.6673	.5091
	(X)	124	6.3951	21.2173	.0001*
S					
	(P)	69	2.5942	5.7755	.0001*
META1 (Cognitive Activities)					
	(X)	237	6.9282	8.0349	.0001*
I					
	(P)	17	6.8235	2.4122	.0282*
	(X)	111	6.9639	5.4328	.0001*
S					
	(P)	56	1.9821	.8445	.4020
META2 (Goal Orientation)					
	(X)	237	7.1434	8.2162	.0001*
I					
	(P)	17	7.6470	2.6139	.0188*
	(X)	111	6.7117	5.3108	.0001*
S					
	(P)	56	4.9464	2.3847	.0206*
AFFECT (Effort-Related Activities)					
	(X)	237	2.9620	3.2626	.0013*
I					
	(P)	17	3.9411	1.2002	.2475
	(X)	110	4.8636	3.0813	.0026*
S					
	(P)	56	-1.9464	-0.8299	.4102

Table 7. S and I Students' Grade Point Averages in 12 Core Curriculum Reading-Intensive Courses

	n	mean	sd	t	p-value
I	194	1.82	1.00		
				1.9826	.0484*
S	87	1.56	1.11		

Table 8. Descriptive Statistics for 12 Reading-Intensive Core Curriculum Courses, Winter, 1995. S,I, and Other Students.

Course	S	GPA	I	GPA	Other	GPA
ANT 150	4	2.00	11	2.09	200	2.57
ART 160	6	2.66	14	2.78	308	3.10
BIO 151	6	2.00	19	1.94	463	2.30
GT 165	5	2.80	5	2.20	236	2.98
HIS 152	10	1.00	10	0.80	370	1.73
HIS 153	7	0.42	14	1.28	405	1.78
HIS 252	4	1.75	6	1.33	462	1.92
HIS 253	6	1.50	17	1.58	522	1.98
MUS 152	6	2.00	23	2.26	260	2.53
PSC 250	8	1.12	34	1.55	827	2.24
PSY 150	12	1.41	41	1.78	486	2.26
SOC 150	19	1.78	34	2.05	431	2.50

Table 9. Number of Letter Grades for Learning Support and Other Students in 12 Reading-Intensive Core Curriculum Courses, Winter, 1995.

	Letter Grades						
Course	A	B	C	D	F	W	GPA
Ant 150							
Regular	37	72	69	13	9	41	2.57
LS	0	5	8	0	2	2	2.06
Art 160							
Regular	130	123	27	12	16	0	3.10
LS	7	5	5	2	1	0	2.75
Bio 151							
Regular	58	136	188	52	29	45	2.30
LS	2	4	13	3	3	1	1.96
GT 165							
Regular	61	120	48	4	3	6	2.98
LS	0	5	5	0	0	0	2.50
His 152							
Regular	36	65	101	81	77	66	1.72
Ls	0	0	8	2	10	0	0.90

Course	Letter Grades A	B	C	D	F	W	GPA
His 153							
Regular	25	85	138	91	66	68	1.78
LS	0	1	6	6	8	0	1.00
His 252							
Regular	27	108	176	107	44	64	1.92
LS	0	0	6	3	1	4	1.50
His 253							
Regular	40	129	195	98	60	51	1.98
LS	1	2	10	6	4	1	1.56
Mus 152							
Regular	47	92	86	24	11	12	2.53
LS	3	7	13	5	1	1	2.20
Psc 250							
Regular	92	242	316	131	46	89	2.24
LS	0	5	16	15	6	2	1.47
Psy 150							
Regular	79	136	151	74	46	62	2.26
LS	2	10	19	14	8	2	1.69

Course	Letter Grades A	B	C	D	F	W	GPA
Soc 150							
Regular	72	157	134	53	15	50	2.50
LS	2	14	20	14	3	0	1.96

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